observable in the skulls of some of the gibbons, and in the lower monkeys, as, for instance the baboons.

The distinction appears to me to be of the same kind as the erect position of man and the different order of the length of his toes as compared with the ape and many of the lower animals—as for instance the third toe in the lion, bear, dog, badger, and hare.

It should be remembered that the nasal bones in man form merely a bridge or back to the osseous structure of the nose, which is mainly due to the upheaval laterally of the pre-maxillary bones. These are less elevated in other animals, and there is no tilting of the nasals proper. In the chimpanzee and the orang the nasals are as flat as in the hippopotamus. On referring to Prof. Mivart's essay on the apes in the "Encyclopædia Britannica," I find he alludes to the transverse convexity of the bones of the nose, which he considers a marked character of man's skull, entirely absent in the chimpanzee. He adds: the nasals in the orang are exceedingly small and flat, "often even uniting in one bone."

In connection with the subject, it may be mentioned that in Quain's "Anatomy" the external nose is said to be due to the development of the frontal lappets in the fifth or sixth week of the human embryo. It is represented in a woodcut in Balfour's "Embryology" as well-formed and prominent so early as in the ninth week.

The existence of the nasal spine in the nostrils of man, but not in the ape or any of the lower animals, is a fact that has to be accounted for. It appears to have been overlooked, but is of some importance in connection with the development of the human nose.

J. PARK HARRISON

January 14

P.S.—The peculiarities of the human nose and the *rationale* of its formation are fully treated of in Prof. Humphry's "Human Skeleton," p. 220.

THE COMET

THE following communication from Dr. Gould of Cordoba Observatory (Argentine Republic) appears in *Astronomische Nachrichten*, No. 2481:—

On September 6 I received information that a bright comet was visible in the east before sunrise. My informant had seen it on the morning of the 5th, and described it as being as bright as Venus and with a brilliant tail. Inquiry showed that it had been seen for several days by *employés* of the railroad and other persons whose duties required them to rise before daylight.

Not only was the morning of September 7 cloudy, but the eastern sky was overcast on every morning for a whole week. On one occasion it seemed that a part of the comet's tail could be distinguished, but not even an approximate position could be obtained for the head. On the morning of the 14th the comet was first seen at the Observatory, and an approximate position obtained from the circles of the equatorial telescope by pointings with the finder. It was then only $13'$ south of the equator, and moving northwardly.

The telescope was equipped with the photographic lens and apparatus, and as my series of stellar photographs was nearly completed and its continuance for a few weeks demanded constant attention, I was reluctant to change the adjustments. It has been my uniform policy in Cordoba to confine our instrumental observations to the southern half of the sky, and, in general, to such regions as are not well visible from northern observatories. And as the comet had been conspicuous for more than a week, was on the equator, and the date of equinox was close at hand, it appeared unadvisable to sacrifice important and unique observations for the sake of determinations of the comet's position which I could not doubt were making under more favourable circumstances in the north. Consequently no micrometric observations were undertaken; but rude determinations of position were repeatedly made, from that time on, by use of the finder and the graduated circles, in order to follow the comet's course and deduce approximate elements and ephemeris.

On September 16 the brightness of the head was such, that it was visible with the finding-telescope throughout the day; and I prepared to observe it on the meridian, having followed it with the equatorial until within half an hour of the time of transit. Its declination was about $+0^\circ 52'$. But not more than five minutes before that moment a large cloud drifted across the meridian, making the observation impossible.

September 17 the comet was very bright and easily found in the full sunlight. At 10h. 40m. a.m. it was necessary to use a shade-glass, on account of its proximity to the sun; and at 11h. the sun and comet were in the same field of view. I again attempted to observe it upon the meridian, but was prevented by a new difficulty. The comet was hidden by the disc of the sun, and although I carefully scrutinised this and especially the preceding limb as it traversed the field of the meridian-circle, no token of the comet could be seen, nor could it be found during the afternoon. Although it must have passed in front of the sun, I then supposed it to have passed behind it and been occulted.

On Monday the 18th the comet was again on the preceding side of the sun and decreasing in declination at the rate of more than $2\frac{1}{2}'$ hourly. Early in the day its brilliancy attracted popular attention throughout the country, and the "blazing star near the sun" was the one topic of remark. Telegrams came to me from all parts of the country, as well as from Chile and Uruguay, calling attention to the phenomenon. In the small telescope it presented the aspect of a brilliant nebulous mass, having at each end curved appendages like horns or wings, nearly large as the central body, and at their base quite as brilliant; the general form of the whole reminding one of the winged globes carved on ancient monuments. This appearance, unquestionably due to the outrush of glowing vapour from the nucleus, was also exhibited, although to less extent, on the two following days, during both of which the comet remained visible to the naked eye.

As soon as the elements of the orbit could be obtained, its similarity to that of the comet of 1843-1880 was manifest, and the suspicions regarding its identity and the hypotheses to which these gave rise presented themselves forcibly, as I am sure they must have done to astronomers in the northern hemisphere, where I doubt not they have long since been a theme of discussion. The perihelion-distance, although small, seems clearly larger than that of the orbits of 1843 and 1880; but how far such discordance is consistent with the hypothesis of identity must be decided by future investigation. The comparatively small amount of study which I have been able to give to the question leads me to think that the orbit deduced from observations before the perihelion may differ somewhat from that indicated by the observation since September 17; but as the Cordoba observations prior to that date were of a crude description, I have impatiently waited for tidings from other observatories. No. 2459 of the *Astr. Nachr.*, which has just reached me, leads me to fear that micrometric or meridian observations may not have been made before perihelion. In such case the rough positions obtained here with the finder and circles of the equatorial may possess a value far greater than was supposed possible at the time. Those previous to the perihelion are ten in number, and although I do not believe that their probable error can exceed a minute of arc in either coordinate, they are not represented within this limit by the elements deduced from observations made since the perihelion. Should no better positions have been obtained I will send these to you; but I cannot yet abandon the hope that some belated astronomer may have seen this brilliant object in season to secure a series of observations before the perihelion passage.

Micrometric determinations have been made here on various dates since October 17, and have now begun

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systematically, as the comet is growing lower for northern observers. But as it will not pass the limit of 30½°, S. Decl. the southerly observatories of Europe and all those of the United States will probably be able to follow it as long as it remains visible, and will find comparison stars in Argelander's Zones.

It will not have escaped your notice that all the elements differ from those of 1880 in the same direction in which these differed from those of 1843.

In the earliest observations made with the large telescope there appeared to be, in the place of the nucleus, a series of bright points following the axial line. The preceding and brightest of these seemed scarcely to exceed the tenth magnitude, and all were connected by intermediate material of somewhat less brilliancy which made it difficult or impossible to count them. Mr. Thome, who has made all the micrometric measurements, thinks that there were certainly not less than five or six, and perhaps more. The appearance was as though the original nucleus had been resolved into a series of ill-defined granules. These have gradually become less and less distinct, until the place of the nucleus now appears occupied by a line of irregular definition and unequal brightness, about 45″ in length, and of an average width of about 5″. All our determinations of position were made for the preceding and brightest of these nodules while they were clearly distinct; and, since then, for the anterior extremity of the bright line, where is a point which is still somewhat brighter than the remaining portions.

Since we are at present overloaded with work, in the preparation of the Zone-Catalogue, and observations are, without doubt, still making in Europe and North America, I will reserve the micrometric determinations until the reductions can be revised.

Those made on the meridian are as follows:—

		α				δ		
		h.	m.	s.		°	′	″
1882, Sept. 18	...	11	20	51·3	...	+0	16	39·3
19	...	11	14	31·0	...	−0	32	38·6
21	...	11	4	57·9	...	−1	59	30·2

Cordoba, November 14, 1882 B. A. GOULD

DESTRUCTION OF LIFE IN INDIA BY WILD ANIMALS

IN a recent communication I called attention to the loss of human and animal life in India from snake bites; I now proceed to describe the mortality due to wild animals, which, though much less than the former, is very considerable, and forms an important item in the mortuary returns.

The statement appended shows in detail for each province the number of persons and cattle killed by wild animals, and the number of wild animals destroyed, with the rewards paid for their destruction during the year 1881, as compared with the previous year. The figures are summarised in the following tables:—

Number of Human Beings and Cattle Killed by Wild Animals

	Persons killed.		Cattle killed.	
	1880.	1881.	1880.	1881.
Madras	223	238	8,667	8,668
Bombay	136	141	4,537	2,398
Bengal	1,295	1,367	14,567	8,423
North-Western Provinces and Oudh ...	561	470	8,140	7,971
Punjab	42	27	7,986	4,083
Central Provinces ...	289	248	3,711	2,929
British Burma	32	34	978	898
Coorg	Nil	Nil	219	191
Assam	234	211	3,269	2,802
Hyderabad Assigned Districts	24	18	3,560	3,013
Ajmere-Merwara ...	4	3	216	264
Total	2,840	2,757	55,850	41,640

Number of Wild Animals destroyed and Amount of Rewards Paid

	1880.				1881.			
	Destroyed.	Rewards.			Destroyed.	Rewards.		
		Rs.	a.	p.		Rs.	a.	p.
Madras.........	1,284	16,579	10	0	1,429	20,251	5	0
Bombay	1,717	4,775	1	0	1,367	4,965	13	0
Bengal	4,783	24,841	10	6	4,213	23,316	3	0
N.-W. Provinces and Oudh...	2,924	7,295	4	0	3,037	8,434	14	0
Punjab	1,389	4,715	0	0	1,411	4,856	3	0
Cent. Provinces	1,408	17,887	8	0	1,351	15,842	0	0
British Burma.	639	3,468	0	0	1,059	4,260	8	0
Coorg..........	26	140	0	0	15	215	0	0
Assam.........	541	7,022	10	0	1,176	7,552	2	0
Hyderabad Assigned districts	167	1,590	0	0	216	2,156	0	0
Ajmere-Merwara	8	13	0	0	5	Nil		
Total ...	14,886	88,327	11	6	15,279	91,850	0	0

The resolution of Government, dated November 8, 1882, in dealing with this subject, gives the following details, which are so far satisfactory, as they show that organised measures are now being put in force for the destruction of wild beasts, and that already there has been diminution in the loss of human and domestic animal life. As in the case of venomous snakes, the prevention, or at all events diminution of loss of human and domestic animal life from the ravages of wild animals, is a question mainly of time, perseverance, and expenditure of money. The last consideration perhaps may have stood in the way of progress, not that expenditure of rupees either has been or would be grudged, were there certainty that it would overcome the evil, but that there may have been, perhaps is, a natural reluctance to spend public money for what seems an uncertain benefit, as some have regarded a system of rewards for destruction of snakes and wild animals. The Government of India has always evinced a desire to adopt any steps that might reasonably afford hope of relief, and many resolutions by the supreme and local Governments, and considerable expenditure of money wlth this object in view, proves that the authorities have been and are alive to the magnitude of the evil and to the importance of repressing it, and that they have taken measures which in some districts have been attended with a fair amount of success. But the absence of a thoroughly organised system of dealing with the evil, and the desultory and varying methods employed have prevented the attainment of the success that might fairly be expected and would be obtained under better arrangements; and it will not be until some complete organised system have been steadily and perseveringly prosecuted that the desired result will be accomplished. A few years ago (in 1878), when calling attention to this subject, I noted that the loss of life from wild animals in 1875 and 1876 had been as follows:—

Animals.	Killed in 1875.		Killed in 1876.	
	Persons.	Cattle.	Persons.	Cattle.
Elephants	61	6	52	3
Tigers	828	12,423	917	13,116
Leopards	187	16,157	156	15,373
Bears	84	522	123	410
Wolves	1,061	9,407	887	12,448
Hyænas	68	2,116	49	2,039
Other animals ...	1,446	3,011	143	4,573
Total... ...	3,735	43,642	2,327	47,962

Comparing these returns with that of 1880-81 it will be observed that the loss of life has not been materially diminished

	Persons killed.
1880	2,840
1881	2,757
1875	3,735
1876	2,327

though there is reason to hope that future yearly reports will be more favourable.

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